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Foreign Documents Branch C I A Periodical Abstracts

8 Jun 1948 SCIENTIFIC Number 43

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Abstracted in this issue:

Title	Issue		Date
Russian Periodicals			
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of the USSR, New Series) Cards 3-18, 23-28, 30-69, 87-93, 95-104, 106	Vol LIX	No 2 No 4	Jan 1948 Feb 1948
"Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk" (News of the Academy of Sciences of the USSR, Department of Technical Sciences) Cards 1, 2, 19, 20, 22, 29, 70-76, 94, 105		No 1 No 2	Jan 1948 Feb 1948
"Stal'" (Steel) Cards 21, 77-86		No 3	Mar 1948

NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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USSR/Academy of Sciences Jan 1948

"Works Published in 1947 (January to August) by Academicians, Corresponding Members, Academy of Sciences, USSR, and Other Scientific Collaborators in the Department of Technical Sciences, Academy of Sciences, USSR" 12 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Lists scientists who published works in following categories: automatics, telemechanics, and transmission; geology and petrography; hydrotechnics and hydrology; mining; machine structures; metallurgy and metal studies; mechanics and mathematics; dressing of useful minerals; radio engineering; calculating in-

FDB 43T1

USSR/Academy of Sciences (Contd) Jan 1948

struments and machines; thermal engineering; fuel (combustion and gasification; chemistry, physical chemistry and technology of fuel); transportation; chemistry; electrical engineering; electric welding; energetics; general questions; and material on bibliographies of the scientists.

FDB 43T1

USSR/Chemistry - Electrolysis 11 Jan 1948
Chemistry - Amalgams

"Kinetics of the Decomposition of Amalgams and Overvoltage of Hydrogen at the Mercury Cathode in Alkaline Solutions," Z. A. Iofa, Z. B. Pechkovskaya, Chair Electrochem, Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Besides testing theory experimentally, authors interested in use of results of study of kinetics of decomposition of amalgams to find and test the equation for overvoltage of hydrogen at the mercurial cathode in very diluted alkaline solutions. Experiments confirm hypothesis of A. N. Frumkin on electrochemical

FDB 43T4

USSR/Chemistry - Electrolysis (Contd) 11 Jan 1948

mechanism of process of decomposition of the amalgam. Also prove and confirm dependence of overvoltage upon the composition of diluted alkaline solutions, following directly from Frumkin's theory on influence of the structure of dual electrical layer on the kinetics of discharge. Submitted by A. N. Frumkin, 29 Oct 1947.

FDB 43T4

USSR/Chemistry - Electrochemistry Feb 1948
Chemistry - Sulfides, Metallic

"Dissolving Metallic Sulfides Electrochemically," D. M. Chizhikov, Corr Mem, Acad Sci USSR; B. Z. Ustinskiy, Inst Metal imeni A. A. Baykov, Acad Sci USSR, 6 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Describes experiments giving methodical study of anode dissolution of synthetic sulfides of copper, nickel, and cobalt in acid electrolyte, and tabulates results.

FDB 43T2

USSR/Chemistry - Olefins 11 Jan 1948
Chemistry - Synthesis

"New Examples of Asymmetric Synthesis," A. Korolev, V. Mur, Inst Org Intermediate Products and Dyes imeni K. Ye. Voroshilov, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Presents new examples of asymmetrical induction in conditions of diene synthesis. In one case, active substance is phyllodiene (l-menthyl ether of fumaric and maleic acid) and the other, diene (l-menthyl ether of sorbic acid). Submitted by Academician V. M. Rodionov, 30 Sep 1947.

FDB 43T3

USSR/Chemistry - Barium Oxide 11 Jan 1948
Chemistry - Cathodes

"Certain Physical Properties of Oxide-barium Thermocathodes," N. D. Morgulis, V. S. Yagovdik, Kiev State U imeni T. G. Shevchenko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Reports study of complex phenomena arising inside a real oxide thermocathode in the process of its electronic emission. Presents series of experimental results, obtained for first time, characterizing volumetric properties of real effective oxide-barium thermocathode. Data very useful to understand the processes arising in it and to construct new more

FDB 43T5

USSR/Chemistry - Barium Oxide (Contd) 11 Jan 1948

complete theory of thermoelectronic emission of effective cathodes. Submitted by Academician S. I. Vavilov, 10 Nov 1947.

FDB 43T5

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USSR/Chemistry - Silicon Compounds, Organic Feb 1948
Chemistry - Silicates

"Theory of Formation of New Kinds of Silicate Materials on the Basis of Silicon Organic Compounds," A. P. Kreshkov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments confirming author's theory that materials obtained from silicon organic compounds have two-component system in which one phase is liquid and the other, solid. Submitted by Academician D. S. Belyankin, 23 Nov 1947.

FDB 43T6

USSR/Chemistry - Octane, 2-, 7-Dimethyl Feb 1948
Chemistry - Peroxides

"Peroxidation Compounds of 2.7-Dimethyl Octane," K. I. Ivanov, V. K. Savinova, V. P. Zhakhovskaya, All-Union Fuel Engin Inst imeni F. E. Dzerzhinskiy, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments showing that use of ultraviolet light on saturated hydrocarbons with open circuit of atoms makes them oxidize in comparatively mild temperature conditions. Submitted by Academician S. S. Nametkin, 23 Oct 1947.

FDB 43T7

USSR/Chemistry - Oxygen Compounds Feb 1948
Chemistry - Isomerism

"Reactions of Metallic Derivatives of Oxygen Compounds and the Tautomerism Effect," A. N. Nesmeyanov, Academician, I. F. Lutsenko, Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Derives series of equations as result of experiments on oxygen compounds, and discusses tautomerism effect under given conditions.

FDB 43T8

USSR/Chemistry - Glass, Properties of Feb 1948
Chemistry - Periodic System

"Application of L. I. Mendeleyev's Periodic Law to the Properties of Glass," N. V. Solomin, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments to determine effect of separate glass components on their physical qualities, and shows positive results in case of equimolecular components. Submitted by Academician I. V. Grevenshchik, 4 Dec 1947.

FDB 43T9

USSR/Chemistry - Hydrogen Bonds Feb 1948
Chemistry - Hydroxides

"Research on the Hydrogen Bond of Aqueous Solutions of Hydroxides by Method of Combination Diffusion of Light," M. I. Batuyev, Inst Org Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Examines question of optical characteristics of hydroxyl group of bases forming the antipode of the acid hydroxyl group. Submitted by Academician B. A. Kazanskiy, 6 Dec 1947.

FDB 43T10

USSR/Electricity Feb 1948
Superconductivity
Detectors, Metal

"Detector Properties of Superconductors," A. A. Galkin, B. L. Lazarev, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments designed to study newly discovered detection properties in superconductors, concluding that demodulation of modulated alternating current explained by nonlinear ratio of voltage to current in the transitional zone.

FDB 43T11

USSR/Electricity Feb 1948
Fields, Electrostatic
Arcs

"Effect of a Heterogeneous Field of Charged Particles on the Displacement of Therms in Gaseous Discharges," V. S. Miliyanchuk, Lvov State U, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Examines possibility to explain displacement of therms in arc as result of effect of heterogeneous electric field. Submitted by Academician S. I. Vavilov, 8 Dec 1947.

FDB 43T12

USSR/Electricity Feb 1948
Lamps, Fluorescent
Mercury

"Metastable Atoms in a Fluorescent Lamp," K. Panevkin, All-Union Electrotech Inst imeni V. I. Lenin, Moscow Energetics Inst imeni V. M. Molotov, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Gives experimental determination of duration of life in excited atoms of mercury under normal working conditions (current 350 MA, mercury steam pressure 0.01 mm Hg, diameter of discharge tube 36 mm, argon pressure 4 mm Hg). Submitted by Academician S. I. Vavilov, 29 Nov 1947.

FDB 43T13

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USSR/Electricity Feb 1948
Discharges, Electric
Metals

"Structural Variations in a Metal Acted Upon by a Condensed Electrical Discharge," G. I. Pokrovskiy, V. I. Likhtman, Inst Phys Chem, Acad Sci USSR, Mil Engin Red Banner Acad imeni V. V. Kuybyshev, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Gives details of preliminary experiments on various metals using highly condensed energy, and shows very satisfactory results. Submitted by Academician S. I. Vavilov, 22 Dec 1947.

FDB 43T14

USSR/Electronics Feb 1948
Fields, Electromagnetic
Electrons - Measurements

"On the Kinetics of Electrons and Electromagnetic Fields," Ye. A. Vaynrib, G. V. Spivak, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes action of magnetic field on functions of distribution of electrons in gas-discharging plasma, and compares linearized function of distribution with functions calculated from the kinetic equation. Submitted by Academician A. A. Lebedev, 15 Nov 1947.

FDB 43T15

USSR/Engineering 11 Jan 1948
Hydromechanics
Soil Science

"Problem of Consolidation of an Earth Medium," V. A. Florin, All-Union Sci Res Inst Hydrotech, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2
In setting up properly calculated model, the following basic propositions are used: 1) Calculated model for unstabilized state must be such that produced tension state of the soil frame conforms with tension state taken for the stabilized state within limits of attenuation of process of consolidation. 2) Tangent tensions can arise only in the soil frame (relative to it and liquid in the very fine spaces between the grains of the soil frame possessing special properties) when

FDB 43T16

USSR/Engineering 11 Jan 1948
Furnaces
Refractory Materials

"Dinas in a Magnesium Band," V. A. Bron, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Study of dinas after use in furnace completing more than 268 runs shows that it has usual four-zone structure. However, following peculiarities of deterioration of the dinas noticed: a) Black zone twice as long as this zone in ordinary dinas develops. Indicates more energetic evacuation of fusion in the upper zone than in ordinary dinas, also confirming chemical composition and fire resistance of

FDB 43T17

USSR/Engineering (Contd) 11 Jan 1948

they can be transmitted both by the soil frame and the liquid between its pores as normal pressure acting on any area. Submitted by Academician L. S. Leybenzon, 12 Sep 1947.

FDB 43T16

USSR/Engineering (Contd) 11 Jan 1948

the zone. b) No blisters exist on the hot surface and trench, usually observed in ordinary dinas along the bricks from the black zone to the gray zone, indicating lesser solubility of crystallic silica in the fusion. Submitted by Academician D. S. Belyankin, 12 Oct 1947.

FDB 43T17

USSR/Engineering 11 Jan 1948
Elasticity
Deformation

"Theory of Elasticity in Large Deformations Exceeding the Proportional Limit," P. M. Riz, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Explains possibility to construct theory covering the elastic field and allowing approximate determination of equilibrium state beyond limits of proportionality in the field, conditionally called plastic. Submitted by Academician S. A. Khristianovich, 20 Nov 1947.

FDB 43T18

USSR/Engineering Jan 1948
Furnaces
Fuel

"Initial Heating of Fuel in Shaft Furnaces and Gas Generators," B. V. Kantorovich, Energetics Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR, 10 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Furnace shafts and direct-process gas generators dry and preheat fuel before it is admitted to combustion chamber. Pays particular attention to preheating the fuel. Discusses preheating small- and large-size fuel, and coefficient of heat exchange. Gives practical example for using formulas. Sub-

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USSR/Engineering Jan 1948
Coke
Combustion

"Combustibility of Coke," N. P. Chizhevskiy, Academician, D. M. Chernyshev, Inst Mineral Fuels, Acad Sci USSR, 4½ pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Conducted studies to show relationship between indicators showing changes in combustion of coke and new indicators for evaluating the quality of metallurgic coke. Authors able to determine relationship between combustion of coke and its performance in dome furnaces. Submitted, 24 Sep 1947.

FDB 43T20

USSR/Engineering (Contd) Jan 1948

mitted by Academician M. V. Kirpichev at the Energochemical Section of Scientific Council, Energetics Institute, 1945. Published, 8 Jul 1947.

FDB 43T19

USSR/Engineering Mar 1948
Furnaces
Coal

"Substituting Other Grades of Coal for Zhurinsk Coal," V. I. Yeremin, Engr, GlavEnergo, MChM, 3 pp

"Stal'" No 3

Ural Metallurgic Plants can use Grade SS coal from the "Ziminka" shaft of the Prokop'yevskUgol and Shaft No 3 of KaganovichUgol instead of Zhurinsk coal for gas-generating stations for the fireproofing and rolling shops. However, tests must still be conducted to determine changes which must be made before Martin furnace plants can make the changeover.

FDB 43T21

USSR/Geological Prospecting Feb 1948
Coal

"Determination of the Length of a Coal Field under Mining Conditions in the Moscow Coal Basin," A. P. Sudoplatov, Inst Mining, Acad Sci USSR, 16 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Gives details of composition of coal in Moscow coal basin, and formula to calculate the length of coal deposit in given area.

FDB 43T22

USSR/Geological Prospecting 11 Jan 1948
Mercury

"A New Mercury Lode in the North Caucasus," P. T. Kozhukhov, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Author discovered mercury deposit in the sandy conglomerate strata of the upper formation of Lower Permian in the upper Drasnoy Valley, right tributary of Kyshkyt River. Describes geologic structure of the deposits in detail. Submitted by Academician D. S. Belyankin, 18 Jul 1947.

FDB 43T23

USSR/Geological Prospecting 11 Jan 1948
Iron Ores

"Iron Ore Concentrations at Motmos-Doschatoye on the Oka River in Gor'kiy Oblast," L. M. Miropol'skiy, G. L. Miropol'skaya, Kazan U, Gor'kiy Geol Adm, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Discusses geologic origin, mineral composition, presence of spherosiderite and distribution, structural form, composition, and results of ore analysis of this bed. Submitted by Academician D. S. Belyankin, 17 Oct 1947.

FDB 43T24

USSR/Geology Feb 1948
Tectonics

"The General Tectonic System of Western Siberia and Eastern Kazakhstan," V. D. Fomichev, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes, with aid of map of Siberia and Kazakhstan, folding zones of various ages and their stages. Submitted by Academician V. A. Obruchev, 10 Dec 1947.

FDB 43T25

USSR/Geology Feb 1948

"New Data on the Paleozoic and Mesozoic Eras of the Kanin Peninsula," Ye. M. Lyutkevich, Leningrad State Geol Adm, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes discovery of islets of Jura deposits lying on deposits of Lower Trias and on the Tartar Stratum; their total thickness, 2 - 8.5 meters. Submitted by Academician D. S. Belyankin, 29 Nov 1947.

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USSR/Geology Feb 1948
Tectonics

"Origin of Alkaline Granites in Kola Peninsula," B. M. Kupletskiy, A. A. Chumakov, Kola Sci Res Base imeni S. M. Kirov, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes research on alkaline granites in the Zapadnyye Keyvi region of Kola Peninsula and gives details of their geologic structure and properties. Submitted by Academician D. S. Belyankin, 1 Dec 1947.

FDB 43T27

USSR/Geology Feb 1948
Clay
Gypsum

"Gazha /TN: Mixture of Clay and Gypsum/ and Its Thermal Dissociation," P. P. Budnikov, Corr Mem, Acad Sci USSR, O. P. Mchedlav-Petrosyan, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes deposits of gazha at Tbilisi, Signakh, Akhaltsikh (Georgian SSR), Erevan, Takhmagan, Leninakan (Armenian SSR), Kirovobad, Lenkoran, Tauz (Azerbaydzhan SSR) and others. Tabulates percentage dissociation under different conditions.

FDB 43T28

USSR/Geology Jan 1948
Geological Prospecting
Petroleum

"Geological Structure and Petroleum-bearing Possibilities of the Western Part of the Kurinsk Depression and Adjacent Parts of Georgia SSR," M. I. Varentsov, Inst Mineral Fuels, Acad Sci USSR, 12 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Briefly reports studies conducted by author on geologic structure of petroleum-bearing layers of subject regions, and points out principal directions in which future studies should be made. Gives sectional map of Mesozoic-Cenozoic deposits of western part of the

FDB 43T29

USSR/Geology (Contd) Jan 1948

Kurinsk depression. Submitted by Academician S. S. Nametkin at section of Scientific Council, Institute of Mineral Fuels, Academy of Sciences, USSR, 4 Feb 1947. Published, 17 Mar 1947.

FDB 43T29

USSR/Geology 11 Jan 1948

"Scapolite from the Crystalline Limestone (Xenolite) of the Granodiorite Quarry Near Gnivana Station in Vinnitsa Oblast," D. P. Bobrovnik, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Author studied scapolite in microsections and powder by the immersion method as well as by chemical analysis. Briefly reports results. Look upon hydrothermal processes in this region as postmagmatic, and combined with intrusions of magma of rose-colored aplite granite. Submitted by Academician D. S. Belyankin, 18 Oct 1947.

FDB 43T30

USSR/Geology 11 Jan 1948
Stratification

"Coccolites, Rock Formers of the Foraminiferous Strata of the North Caucasus," V. T. Malyshok, Geol Res Lab, Krasnodar Oil Exploration Trust, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Microscopic study of finely dispersed fractions made by author to determine material composition of remains of deposits, color of rocks of different horizons with subsequent use for stratigraphic correlation and possible paleographic structures. Presents phase of his study on coccolites. Submitted by Academician D. V. Nalivkin, 29 Oct 1947.

FDB 43T31

USSR/Geophysics 11 Jan 1948
Earth - Electrical Properties

"Method of Studying the Development of an Electric Field in the Earth," B. S. Ehenshteyn, Geophys Inst, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Describes in detail method developed by author to study development of electric field in the earth. Length of time of development of field depends upon average specific resistance of the earth and distance between point of excitation of field and point of observation, i.e., between centers of transmitting and receiving dipoles. Submitted by Academician O. Yu. Shmidt, 30 Oct 1947.

FDB 43T32

USSR/Hydrology 11 Jan 1948
Oil Regions

"Subterranean Waters of Gas and Oil-Bearing Lodes of Saratov Oblast," I. B. Feygel'son, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

In studying chemical composition of subject waters, author established following: 1) Two classes of water found: salt, having sodium-sulfate, hydro-sodium-carbonate magnesium chloride and calcium chloride types, and brine, having only calcium chloride types. 2) Mineralization of the water increases with depth of water-bearing strata. 3) Salt waters found in the Mesozoic deposits and upper

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USSR/Hydrology 11 Jan 1948
Limnology

"Remains of Living Organisms in the Bottom Depositions of Lake Baykal," G. G. Martinson, Baykal Limnological Sta, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Study made by the Baykal Limnological Station shows that the composition of remains of animal organisms in the bottom sediment of Lake Baykal is very different from remains of fauna in other ordinary small lakes. Describes method to study the monoliths, and discusses these differences. Submitted by Academician D. V. Nalivkin, 31 Oct 1947.

FDB 43T34

USSR/Hydrology (Contd) 11 Jan 1948

part of the middle carbon deposits; while below this to the Devonian deposits all strata contain only brine. Submitted by Academician D. S. Belyankin, 5 Nov 1947.

FDB 43T33

USSR/Medicine - Roentgen Rays Feb 1948
Medicine - Histology

"Histological Analysis of the Degree of Damage Caused by X-rays in Dendrocoelum Lacteum," N. K. Shmidt, Cent Roentgenological, Radiological and Cancer Trust, Ministry Public Health USSR, Leningrad, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Shows that extent of damage occurring during life can be attributed, primarily, to enforced discontinuation of mobility of region of the head and to bending of frontal and lateral lobes onto the abdominal side. Submitted by Academician I. I. Shmal'gauzen, 27 Nov 1947.

FDB 43T35

USSR/Medicine - Worms 11 Jan 1948
Medicine - Parasites

"New Family of Cestoidea Skrjabinochoridae Fam. Nov, Characterized by Complete Absence of Uterus," A. A. Spasskiy, Helminthological Lab, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Describes results of studies conducted on cestode of Cyclophyllidae family usually found as parasite on reptiles. Gives characteristics of new type called the Skryabinochora sobolevi nov. gen. nov. sp. Submitted by Academician K. I. Skryabin, 17 Oct 1947.

FDB 43T36

USSR/Medicine - Embryology 11 Jan 1948
Medicine - Ascorbic Acid

"Ascorbic Acid in the Blood and Tissues of Rabbits and Guinea Pigs in Ontogenesis," V. N. Borsuk, Inst Evolutionary Physiol and Pathol of Higher Nervous Activity imeni I. P. Pavlov, Acad Med Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Conducted experiments to study the role of ascorbic acid in ontogenesis. Used embryos of various animals in various stages of development. Some of results: Embryogenesis of the rabbits prolonged 30 days. Rabbits eventually born completely helpless, blind, and without hair. Embryonal period of guinea pigs

FDB 43T37

USSR/Medicine - Rubber Plants 11 Jan 1948
Medicine - Phosphates

"Effect of Phosphate Feeding Conditions in the Initial Phases upon Kok-Saghyz Rubber Plants," N. N. Mikhaylov, Lab Agrochem, All-Union Sci Res Inst Rubber Plants, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

In past experiments, author clarified significance of improved conditions of phosphate nutrition on initial phases of kok-saghyz plant. In this article, discusses studies conducted to determine effect of initial stages of phosphate feeding of plants on final development of the plant. Pays particular

FDB 43T38

USSR/Medicine - Embryology (Contd) 11 Jan 1948

doubled (to 60 days). However, they were born in condition in which they were fully capable of taking care of themselves. Submitted by Academician L. A. Orbeli, 10 Nov 1947.

FDB 43T37

USSR/Medicine - Rubber Plants (Contd) 11 Jan 1948

attention to absolute rubber content in the plant during growth period. Submitted by Academician N. A. Maksimov, 26 Oct 1947.

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USSR/Medicine - Plants
Medicine - Pollen
11 Jan 1948

"Our Knowledge of the Physiology of Pollen Germination. Particulars of the Germination of Pollen Seeds of Primula Officinalis Jacq. in Connection with Heterostyles," I. N. Golubinskiy, Ukrainian SSR Sci Res Sta Hop Growing, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Experiments gave following results: Primula officinalis pollen present in nutritive solutions emits secretions having effect on percentage of sprouting, and length of pollen tubes. Self-pollination slows propagation of pollen, while pollen from other plants speeds

FDB 43T39

USSR/Medicine - Plants (Contd) 11 Jan 1948

sprouting. Therefore, observed that secretions isolated by heterostylic pollen were specific, possessing various chemical affinities. Submitted by Academician N. A. Maksimov, 21 Oct 1947.

FDB 43T39

USSR/Medicine - Photosynthesis
Medicine - Potassium
11 Jan 1948

"Importance of the Potassium Cation for Photosynthesis," N. P. Voskresenskaya, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Conducted experiments to explain significance of potassium, calcium, and sodium to growth. Exposure to these minerals was of short duration. Conducted studies on 20-day barley. Calcium showed negative effect on photosynthesis. Submitted by Academician N. A. Maksimov, 3 Oct 1947.

FDB 43T40

USSR/Medicine - Wheat
Medicine - Fungi
11 Jan 1948

"Certain Wheat Mildew Fungi in the Turkmen SSR," I. A. Katayev, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Describes full-cycle development of following types of mildew: Puccinia cynodontis Desmaz., P. isiacae (Thum.) Winter, and P. aristidae Tracy. Observed growing on Cynodon dactylon (L.) Pers., Aristida pennata Trin., and other types of the same order. Data obtained can be applied only to Ashkhabad and Maryysk Oblasts. V. V. Nikitin was very helpful in studies. Submitted by Academician N. A. Maksimov, 20 Oct 1947.

FDB 43T41

USSR/Medicine - Influenza
Medicine - Viruses
11 Jan 1948

"Resistance of the Grippe Virus to Low Temperature and Its Concentration on Liquid and Paper Surfaces, and in Foam," I. S. Gryaznov, Inst Bact, Epidemiology, and Infectious Diseases, Acad Med Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Gives some facts on transmission of grippe virus. Experiments conducted to determine resistance of grippe virus to subzero temperatures, and methods to obtain pure and virulent grippe virus of high concentration. Submitted by Academician N. F. Gamel, 17 Oct 1947.

FDB 43T42

USSR/Medicine - Seaweed
Medicine - Fish
11 Jan 1948

"Seaweeds as Food for Cladocera," A. G. Rodina, Hydrobiol Sec, Zool Inst, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Cladocera is one of most important zooplankton foods for fry and even adult fish. Thus author discusses all nutritive factors of Cladocera, attempting to determine the nature of live feed. Determines that seaweed Daphnia magna is one of the favorite foods of Cladocera, and also valuable as food for bacteria. Submitted by Academician Ye. N. Pavlovskiy, 3 Nov 1947.

FDB 43T43

USSR/Medicine - Insects
Medicine - Environment
11 Jan 1948

"Relationship between Fauna of Mountaintops and Wooded Fens in Sikhote-Alin," A. I. Kurentsov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Names various types of fauna common to mountaintops and wooded fens in and around Sikhote-Alin. Among some insects mentioned: Pararge deidamia Ev., Lycaena optilete sibirica Stg., Itame fulvaria Vill., etc. Submitted by Academician Ye. N. Pavlovskiy, 14 May 1947.

FDB 43T44

USSR/Medicine - Insects
Medicine - Light, Effects of
11 Jan 1948

"Effect of Daily Periodicity of Light upon the Seasonal Cycles of Insects," A. S. Danilevskiy, K. F. Geyspits, Chair Entomology, Leningrad State U, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Authors set out to show relative effect of long days upon various processes of insect development. Experiments conducted at Peterhof during summer, 1946, when days longest. Temperature variance between various experiments, about 2°. Submitted by Academician I. I. Shmal'gauzen, 20 Oct 1947.

FDB 43T45

Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010003-6

Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010003-6

USSR/Medicine - Flies 11 Jan 1948
Medicine - Chromosomes

"High Mutability of the 'Yellow' Gene in Natural Populations of the Drosophila Melanogaster," N. D. Duseyeva, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Natural mutation of the "Yellow" has genous character. Cytologic analyses of giant chromosomes isolated from nucleus of salivary gland cells, show no evidence of structural disintegration in the X-chromosome, particularly in the disc 1-B1 from which "Yellow" gene localized. Submitted by Academician L. A. Orbeli, 19 Sep 1947.

FDB 43T46

USSR/Medicine - Plants 11 Jan 1948
Medicine - Hybridity

"Effect of the Growth of a Flower upon Crossbreeding with Distantly Related Plants," A. Ya. Kiz'min, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Author set himself task of surmounting the problem of crossbreeding the red currant with the black currant, or with the gooseberry. Used Michurinskiy's method in experiments. Submitted by Academician I. A. Maksimov, 21 Oct 1947.

FDB 43T47

USSR/Medicine - Skin, Regeneration 11 Jan 1948
Medicine - Growth

"Growth-Inducing Substances and Regeneration," A. Filatova, Lab Growth Dynamics, Inst Experimental Med, Acad Med Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Discusses effect of growth-inhibiting substances of the spleen tissues on live skin wounds, effect of growth-inducing substances on regeneration of skin in animals without spleens, and effect of the extract of malignant tumors on healing skin wounds. Submitted by Academician I. I. Shmal'gauzen, 18 Sep 1947.

FDB 43T48

USSR/Medicine - Rye 11 Jan 1948
Medicine - Mucus

"Transformations of Mucus in the Germination and Maturing of a Rye Grain," V. L. Kretovich, I. S. Petrova, Inst Bread-Baking Industry, Moscow, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Experiments show that in the first stages of ripening of grain there is sharp decrease in general amount of water soluble pentosans, chiefly due to complete disappearance, in the waxen maturity stage, of low-molecular pentosans of fraction, composed mostly of free pentose. In later stages of ripening, decrease in general amount of pentosans and

FDB 43T49

USSR/Medicine - Alkaloids 11 Jan 1948
Medicine - Tobacco

"Alkaloids of the Amphidiploid Nicotiana Rustica X Nicotiana Glauca," G. Il'in, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Previous research showed that formation of nicotine is connected with presence of particular root system of tobacco. Starting from this hypothesis and to explain the phenomenon, study of alkaloids in amphidiploid plants conducted according to method of A. A. Shmuk and A. S. Borozdina. Presents results. Submitted by Academician A. I. Oparin, 22 Sep 1947.

FDB 43T50

USSR/Medicine - Rye (Contd) 11 Jan 1948

parallel decrease in content of high-molecular pentosans retarded. Submitted by Academician A. I. Oparin, 7 May 1947.

FDB 43T49

USSR/Medicine - Vertebrates 11 Jan 1948
Medicine - Cold, Effects of

"Restoring Life Functions in Vertebrates Subjected to Freezing Depending on Water Content of the Body," S. N. Matsko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Has been determined that amount of water contained in the body can serve as indication of cold resistance of that body. Author conducted experiments to determine degree of cold to which cold-blooded vertebrates could be subjected, and still be revived. Submitted by Academician I. I. Shmal'gauzen, 25 Jul 1947.

FDB 43T51

USSR/Medicine - Worms 11 Jan 1948
Medicine - Taxonomy

"Classification of the Ankyrocotyle Baicalense Wlasenko," O. N. Bauer, All-Union Sci Res Inst Lake and River Fish Econ, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Describes new order and type of monogenetic trematode, first discovered by N. M. Vlasenko. Temporarily classed with the Polyopisthocotylinea on basis of various characteristics. Submitted by Academician L. S. Berg, 17 Oct 1947.

FDB 43T52

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Approved For Release 1999/08/25 : CIA-RDP78-03107A002000010003-6

USSR/Medicine - Mosquitoes 11 Jan 1948
Medicine - Chromosomes

"Structural Features of Giant Chromosomes of the Salivary Glands of Larvae Anopheles Maculipennis Messeae," N. V. Dubovskiy, L. V. Kel'shteyn, Kharkov State U imeni A. M. Gor'kiy, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Salivary glands of Anopheles Maculipennis Messeae larvae in the fourth phase (just before becoming chrysallis) from vicinity of Khar'kov used for study. One in series of studies to solve number of problems in general cytology, particularly the question of causes and regularities of heterochromatization. Dis-

FDB 43T53

USSR/Medicine - Mosquitoes (Contd) 11 Jan 1948

cusses characteristics of the chromosome center and characteristics of heterochromatization of the chromosome. Submitted by Academician I. I. Shmal'gauzen, 13 Oct 1947.

FDB 43T53

USSR/Medicine - Zoology 11 Jan 1948
Medicine - Larva

"Types of Larval Development in Dendrogasteridae (Ascothoracida, Entomostraca)," V. L. Vagin, Leningrad State U, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Describes some particulars of larval stages of certain Dendrogasteridae. Among those studied were the Dendrogaster astropectinis Josii, Dendrogaster rimsky-korsakowi, Dendrogaster murmanensis Kluge n. nud., and Dendrogaster dogieli n. sp. Submitted by Academician I. I. Shmal'gauzen, 3 Nov 1947.

FDB 43T54

USSR/Medicine - Hearing Feb 1948
Sound - Relaxation

"Relaxation Theory of Hearing," Ya. I. Frenkel', Corr Mem, Acad Sci USSR, Leningrad Phys Tech Inst, Acad Sci USSR, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes original theory of hearing based on resonance, and shows that relaxation vibrations simulating normal resonance effect can be used for sound perception with help of the cortex of the organ.

FDB 43T55

USSR/Medicine - Fish Feb 1948
Medicine - Temperature, Effects

"Upper Temperature Limits of the Baykal Cottoidei," D. N. Taliyev, Ye. A. Karyakev, Baykal Limnological Sta, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Analyses experimental study of 20 forms of Baykal Cottoidei, carried out on 127 different fish. Tabulates results for average, maximum and minimum temperatures. Submitted by Academician I. I. Shmal'gauzen, 10 Nov 1947.

FDB 43T56

USSR/Medicine - Immunity Feb 1948
Medicine - Dysentery Bacilli

"Antigenic and Immunogenic Properties of Nucleoproteins of Dysentery Bacteria," A. N. Belozerskiy, V. D. Gekker, Cent Inst Epidemiology and Microbiol, Ministry Public Health USSR, Bot Inst, Moscow State U imeni M. V. Lomonosov, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes research on nucleoproteins obtained from B. Shigella paradysenteriae Flexner. Tabulates their antigenic and immunogenic properties. Submitted by Academician A. I. Oparin, 1 Dec 1947.

FDB 43T57

USSR/Medicine - Fungi Feb 1948

"The Problem of Polymorphism in Gloeosporium Lagenarium (Pass.) Sacc. et Roum," M. N. Rodigin, Bashkir Agr Inst, Ufa, 1½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Lists eight types of polymorphic fungi, possessing forms differing completely from each other. Describes principal characteristics. Submitted by Academician B. L. Isachenko, 24 Nov 1947.

FDB 43T58

USSR/Medicine - Plants Feb 1948
Medicine - Temperature Effects

"Rate of Growth of Cultivated Plants in Mountains in Relation to the Temperature Factor," A. A. Malyshev, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments on mountain plants, and observes that in cases where temperature at the highest point exceeded that in lower zones, cultivated plants increased growth rate in flowering stage. Submitted by Academician N. A. Maksimov, 20 Nov 1947.

FDB 43T59

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USSR/Medicine - Plants Feb 1948
Medicine - Cells

"Age Changes in Plant Cells, and the Isoelectrical Point of the Protoplasm," V. G. Konarev, State Pedagogical Inst imeni V. P. Chkalov, Chkalov, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments designed to study the isoelectrical point of cells of various tissues in connection with their growth and physiological composition. Experiments conducted in winter, 1946-1947 and summer, 1947. Submitted by Academician N. A. Maksimov, 20 Nov 1947.

FDB 43T60

USSR/Medicine - Plants Feb 1948
Medicine - Growth

"An Experiment on the Practical Uses of the Photoculture of the Oak Quercus Pedunculator Ehrh," V. M. Leman, Agr Acad imeni K. A. Timiryazev, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Experiment conducted over three-year period. Contains tables indicating height and diameter of stem, number of branches, number of leaves, etc., at various stages of development. Submitted by Academician N. A. Maksimov, 15 Nov 1947.

FDB 43T61

USSR/Medicine - Nerves Feb 1948
Medicine - Nervous System, Embryology

"Development of Innervation of the Glomus Caroticum in Man," V. N. Ponomareva, All-Union Inst Experimental Med, Inst Neurology, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments designed to investigate development of innervation of the glomus caroticum in man, and concludes that basic innervation in the embryonal period takes place in carotid branch of glossopharyngeal nerve. Submitted by Academician I. I. Shmal'gauzen, 11 Nov 1947.

FDB 43T62

USSR/Medicine - Regeneration Feb 1948
Medicine - Skin

"Role of the Epithelium and Corium of Regionally Different Skin in the Regeneration of the Limbs of Anurous Amphibians," G. I. Gintsburg, Inst Cytology, Histology, and Embryol, Acad Med Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments which led to conclusion that the corium of regionally different skin does not play active part in regeneration of a limb but evidently retards its dedifferentiation. Submitted by Academician I. I. Shmal'gauzen, 25 Nov 1947.

FDB 43T63

USSR/Medicine - Regeneration Feb 1948
Medicine - Frogs

"Analysis of Gradients of Discrimination in the Regenerative Ability of Limbs in Anurous Amphibians," L. V. Polezhayev, Inst Cytology, Histology, and Embryol, Acad Med Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes new data on question of what factors govern gradients of discrimination in regenerative ability of limbs, and gives experimental details. Submitted by Academician I. I. Shmal'gauzen, 26 Nov 1947.

FDB 43T64

USSR/Medicine - Cold, Effects of Feb 1948
Medicine - Frogs

"Restoration of Vital Functions in Vertebrate Animals Exposed to Freezing, Depending on Degree of Freezing and Rate of Warming," S. N. Matsko, A. T. Zhmeydo, V. M. Selivanova, Inst Experimental Physiol and Therapy, Ministry Public Health USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Gives details of series of experiments on frogs subjected to various changes in temperature. Describes processes of ice formation in central parts of the body. Submitted by Academician I. I. Shmal'gauzen, 4 Dec 1947.

FDB 43T65

USSR/Medicine - Rats Feb 1948
Medicine - Embryology

"Research on the Thyreotropic Potential of the Embryonic Hypophysis of Mammals by Means of Chorioallantoid Transplantations," M. S. Mitskevich, Inst Evolutionary Morphol imeni A. N. Severtsov, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments showing that embryonic hypophysis of mammals displays first thyreotropic potential in last quarter of embryonic life for rats, beginning of second half for rabbits, and end of the first half for pigs. Submitted by Academician I. I. Shmal'gauzen, 4 Dec 1947.

FDB 43T66

USSR/Medicine - Plankton Feb 1948
Medicine - Water, Supply

"On the Flow of Vegetable Plankton Organisms," A. P. Skabichevskiy, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Stresses importance of water currents for retention of bottom plankton organisms in layer of water, and gives experimental data on the speed of immersion. Submitted by Academician N. A. Maksimov, 8 Dec 1947.

FDB 43T67

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USSR/Medicine - Parasites Feb 1948
Medicine - Worms

"Change in the Functions of the Fixator Apparatus of the Cestode Insinuarotaenia Schikhobalovi gen. et. sp. nov.," A. A. Spasskiy, Helminthological Lab, Acad Sci USSR, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

In Oct 1946, a cestode with an unusual head discovered on small island off north shore of Lake Chana (Novosibirsk Oblast). Describes experiments on cestode, and details of its form. Submitted by Academician K. I. Skryabin, 13 Nov 1947.

FDB 43T68

USSR/Medicine - Heredity Feb 1948
Medicine - Flies

"Duration of the Influence of the Maternal Genotype on the Character of the Evolution of Descendants in Drosophila Melanogaster," R. V. Khesin, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Gives tabular analysis of the difference between speeds of development of first generation females from different breeds of fly during each stage of ontogenesis. Submitted by Academician I. I. Shmal'-gauzen, 12 Nov 1947.

FDB 43T69

USSR/Metals Feb 1948
Oxides
Chlorides

"Reactions of the Interaction of Oxides and Sulfides with Metallic Chlorides," G. S. Frents, Inst Metal imeni A. A. Baykov, Acad Sci USSR, 4 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Gives results of experiments showing that chlorination of cassiterite occurs at temperature of 800° when regenerating agents are present. Certain compounds of other metals react similarly in same circumstances: ferric oxide, pyrrhotine, and sphalerite.

FDB 43T70

USSR/Metals Feb 1948
Silicates
Tin

"Problem of the Interaction of Tin with Metallic Silicate Compounds," D. M. Chizhikov, Corr Mem, Acad Sci USSR; Ye. I. Khazanov, Inst Metal imeni A. A. Baykov, Acad Sci USSR, 6 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Describes experiments designed to study conditions governing contamination of smelted tin by iron, and tabulates results.

FDB 43T71

USSR/Metals Feb 1948
Lead
Platinum

"Influence of Physicochemical Factors on Losses of Metals of the Platinum Group during Oxidizing Lead Smelting," I. N. Plaksin, Corr Mem, Acad Sci USSR; Ye. A. Marenkov, Moscow Inst Nonferrous Metals and Gold imeni M. I. Kalinin, 14 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Discusses results of experiments by authors to determine nature of behavior of platinum metals and extent of their losses during oxidizing lead smelting.

FDB 43T72

USSR/Metals Jan 1948
Copper Alloys
Alloys, Nonferrous

"Hydrostability of Cast Copper Alloys," A. M. Korol'kov, Inst Metal imeni A. A. Baykov, Acad Sci USSR, 4½ pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Conducted experiments to determine changes in hydrostability of cast copper alloys with tin, aluminum and silicon in relation to composition, and also to confirm the bond between these materials and elements of the state diagrams. Submitted by Academician A. A. Bochvar at Colloquium of Institute of Metallurgy, Nov 1946. Published, 15 Jul 1947.

FDB 43T73

USSR/Metals Jan 1948
Precipitants
Solutions

"Theory of the Precipitation of Metals from Solutions by Metallic Precipitants," I. N. Plaskin, Corr Mem, Acad Sci USSR; N. A. Suvorovskaya, O. K. Budnikov, Moscow Inst Nonferrous Metals and Gold imeni M. I. Kalinin, 8 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Speed of precipitation of one metal by another can be determined not only by duration of the relation, but on basis of state and dimensions of the surface of the precipitate, temperature, and composition of the solu-

FDB 43T74

USSR/Metals Jan 1948
Tempering
Currents, Electric - High Frequency

"Rapid Tempering by High Frequency Currents," M. G. Lozinskiy, Inst Metal imeni A. A. Baykov, Acad Sci USSR, 22 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Discusses effects of speed of tempering on transformation of steel, methods used to determine effects of rapid tempering with high frequency currents, simultaneous rapid tempering with high frequency currents, and control of temperature by remote photopyrometers. Gives results of studies on

FDB 43T75

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USSR/Metals (Contd) Jan 1948

tion. Studies conducted on basis of related displacement of metals regarding qualitative study of the process and study of kinetics and mechanics of the reaction. Published, 6 May 1947.

FDB 43T74

USSR/Metals (Contd) Jan 1948

various grades of steel surface-treated after tempering with high frequency currents. Submitted by Academician I. P. Bardin at session of Chair of Heat Treatment, Institute of Steel imeni I. V. Stalin, Nov 1946. Published, 8 Feb 1947. Chairman of Institute of Steel imeni I. V. Stalin: N. I. Gudtsov.

FDB 43T75

USSR/Metals Jan 1948
Martensite
Steel Alloys

"Nature of the Hardness and the Hardening of Metals and Alloys," S. T. Kishkin, R. L. Petrusevich, Inst Metal imeni A. A. Baykov, Acad Sci USSR, All-Union Sci Res Inst Aviation Materials, 10 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 1

Discusses experiments conducted to show that hardening of martensite under pressure is only rare occurrence of strengthening of supersaturated hard steels and it usually disintegrates under influence of plastic deformation. Such approach to problem permits

FDB 43T76

USSR/Metals Mar 1948
Steel
Titanium

"Effect of Titanium and Compatible Additions of Boron, Vanadium, and Titanium on the Crystallization of Steel," V. Ye. Neymark, Candidate Phys Math Sci; I. B. Piletskaya, Engr; R. I. Entin, Candidate Tech Sci, Inst of Metallophys TsNIIChM, 7 pp

"Stal'" No 3

Small additions of titanium improve structure of primary crystallization of carbon steel and increase stability of austenite and annealed steels. Introducing combination of small amounts of vanadium,

FDB 43T77

USSR/Metals (Contd) Jan 1948

new method to study aging of light alloys. Submitted by Academician A. A. Bochvar at Institute of Metallurgy, May 1947. Published, 14 Jul 1947.

FDB 43T76

USSR/Metals (Contd) Mar 1948

boron, and titanium has even more noticeable effect. Data obtained does much toward facilitating proper choice of modifying additions.

FDB 43T77

USSR/Metals Mar 1948
Steel, Chrome
Copper

"Effect of Copper on the Properties of High Carbon Chrome Steel," I. N. Latuntsov, Candidate Tech Sci, NII Bearing Industry, 3½ pp

"Stal'" No 3

Additions of copper to high carbon chrome steel result in formation of a fine-grained (dotted) perlite, increase limits of compactness and proportionality, and decrease relative expansion and compression. Changes in properties of hardened steel very noticeable.

FDB 43T78

USSR/Metals Mar 1948
Metallurgy
Ore Dressing

"Neutralization of Magnitogorsk Ores," N. L. Gol'dshteyn, Candidate Tech Sci, Magnitogorsk Mining-Metal Inst, 4½ pp

"Stal'" No 3

Neutralization of Magnitogorsk ores, process particularly necessary regarding lower horizons and sulfide ores, can be organized with present-day mechanized ore yards, as well as by means of mixing at the mine with plan for reasonable working of the mine and construction of efficient ore-distributing stations.

FDB 43T79

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USSR/Metals Mar 1948
Furnaces, Electric
Steel

"A Contemporary Arc Electric Steel Smelting Furnace," Docent B. S. Barskiy, A. F. Myrtsymov, Candidates Tech Sci, Ministry Ferrous Metal, 9 pp

"Stal'" No 3

To be able to build efficient electric furnaces in Soviet Union, necessary to take as example equipment of large aggregates, capacity from 50 to 70 tons, and equipped with powerful transformers. Shown that it is practical to use graphite electrodes, electric control apparatus and to operate equipment at full capacity.

FDB 43T80

USSR/Metals Mar 1948
Austenite
Steel Ingots

"Effect of Heterogeneity of Ingots on Kinetics of Decomposition of Austenite," N. P. Chuprakova, Engr; Prof V. D. Sadovskiy, Dr Tech Sci, Inst Phys Metals UFAN, 2 pp

"Stal'" No 3

Zonal and dendrite heterogeneity of ingots is result of great effect on speed of perlite precipitation of overcooled austenite, and most noticeable on upper part of the ingot and at its axial points. Kinetics of transformation do not vary in relation to size of the ingot.

FDB 43T82

USSR/Metals Mar 1948
Iron
Magnetic Materials

"Preparations for Smelting Magnetic Iron Ore," A. P. Kvaskov, Candidate Tech Sci, UralMekhaNobr, 4½ pp

"Stal'" No 3

Magnetic iron ore after proper dressing and agglomeration becomes high-quality dome-furnace raw material. As result of combined dressing, serve as base for smelting of pig for quality metallurgy. Output necessary for auxiliary dressing processes low and can be recovered to great degree by realization of secondary products (ore of nonferrous and rare metals).

FDB 43T84

USSR/Minerals Mar 1948
Coal Tar
Pitch

"Supports in Coal Tar Pitch," P. I. Shportenko, Engr, NKMZ, 3¼ pp

"Stal'" No 3

Use of coal tar pitch as bonding material for core mixtures makes possible to obtain pure casting without loam or sand crusts, or swellings. Cores containing sand have high degree of sturdiness, and can be manufactured with much smaller amount of reinforcing iron.

FDB 43T86

USSR/Metals Mar 1948
Metallurgy, Ferrous
Bibliography

"New Literature on Ferrous Metallurgy" 2 pp

"Stal'" No 3

Lists books released in Dec 1947. Include those on: coke chemical industry, mining industry, metallurgy, metal studies, and establishment and construction of metallurgic enterprises.

FDB 43T81

USSR/Metals Mar 1948
Metallurgy, Ferrous
Steel

"Cooling Flake-Sensitive Steel after Hot Mechanical Working," S. A. Iofinov, Engr, GiproMez, 4 pp

"Stal'" No 3

National and foreign studies on regulation of cooling of flake-sensitive steel after rolling or forging show that it is practical to substitute heating aggregates for nonheating pits. These may be tunnel-shaped, pit or chamber furnaces. Thermal processing of metals in these types of furnaces with strict control over the process will prevent formation of flaking.

FDB 43T83

USSR/Minerals Mar 1948
Coal
Coke

"Effect of Karaganda Coal on the Quality of Metallurgical Coke," P. A. Cud'ya (Deceased), V. L. Krol', Engineers, Magnitogorsk Combine, 6 pp

"Stal'" No 3

In spite of fact that furnace-charge coal containing particles of Karaganda coal produced much ash in certain types of furnaces, its use in dome furnaces has no negative effect on productivity of the dome furnace. Further improvement of the quality of coke containing Karaganda coal particles accom-

FDB 43T85

USSR/Minerals (Contd) Mar 1948

plished by lowering ash content of Karaganda TsOF concentrate and the use of differential crushing of furnace-charge components.

FDB 43T85

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USSR/Minerals 11 Jan 1948
Combustion
Coal

"Combustion of Ash Coal," V. I. Blinov, Leningrad Inst Aviation Equipment Construction, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Examines some questions in kinetics of combustion of ash coal. Presents equations describing changes over time of temperature and speed of combustion of sphere of ash coal depending upon conditions in which combustion takes place. Submitted by Academician N. P. Chizhevskiy, 24 Oct 1947.

FDB 43T87

USSR/Minerals Feb 1948
Mica
Titanium

"The Crystallochemical Role of Titanium in Micas," D. P. Serdyuchenko, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Draws summary of chemical composition of micas and their chemical formulas. Lists results of various experiments on titanium in micas. Submitted by Academician D. S. Belyankin, 9 Dec 1947.

FDB 43T88

USSR/Mining 11 Jan 1948
Charges, Explosive
Explosives

"Function of Inert Salts in the Composition of Safety Explosives," A. I. Gol'binder, Moscow Sci Res Inst Safety in Mining Operations, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Results of experiments show that hypotheses relating the role of inert salts in composition of safety explosives only to the absorption of heat erroneous, and that in processes of ignition the chemical nature of the inert salts also shows influence. Makes some remarks on character of influence. Submitted by Academician N. N. Semenov, 6 Nov 1947.

FDB 43T89

USSR/Nuclear Physics - Molecular Structures 11 Jan 1948
Nuclear Physics - Electron Theory

"Electronic Structure of the Cesium Fluoride Molecule," B. V. Nekrasov, Corr Mem, Acad Sci USSR, 1½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Discusses electronic structure of the individual molecule of cesium fluoride of the CsF type with one simple and one dipole bond between the atoms. Shows that calculation of its polarity on basis of value of electrical relationship of the elements gives results which for practical purposes agree with data of experiments.

FDB 43T90

USSR/Nuclear Physics - Isotopes Feb 1948
Nuclear Physics - Helium II

"On the Movement of Foreign Particles in Helium II," L. Landau, Academician, I. Pomeranchuk, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Shows that when their concentration is small, foreign atoms or molecules, including isotopes of helium He^3 and He^6 and electrons entering mass of helium II from outside, cannot take part in the upflowing movement.

FDB 43T91

USSR/Oceanography Feb 1948
Meteorology

"Relation between the Field of Wind, Field of Overall Currents and the Intermediate Field of Masses in a Heterogeneous Ocean," V. B. Shtokman, Inst Oceanology, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Shows that original theory of horizontal circulation in heterogeneous ocean is inadequate, and establishes new set of equations for various conditions. Submitted by Academician P. P. Shirshov, 9 Dec 1947.

FDB 43T92

USSR/Oceanography 11 Jan 1948
Phosphates

"Phosphates in the Bottom of the Sea of Azov," V. G. Datsko, Azov-Black Sea Inst Maritime Fish Econ and Oceanography, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

During the year of 1932, 192 samples of the bottom of various regions of the Azov Sea tested for phosphorous content. Sharp decrease in phosphorous content noticed in summer months. Assuming that decrease in amount of phosphates in surface layers of the bottom is accompanied with increase in water of the sea by equivalent amount of phosphorous, calculates that

FDB 43T93

USSR/Petroleum Industry Feb 1948
Oil Wells
Irrigation

"Irrigation of Oil Wells," P. Ya. Polubarinova-Kochina, Corr Mem, Acad Sci USSR, Inst Mech, Acad Sci USSR, 8 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Describes research carried out in Institute of Mechanics, and indicates methods used to solve various problems of oil-well irrigation. Methods may be used in other problems.

FDB 43T94

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USSR/Oceanography (Contd) 11 Jan 1948

approximately 8,000 tons of phosphate enter the sea each year from the bottom. Submitted by Academician D. S. Belyankin, 31 Oct 1947.

FDB 43T93

USSR/Physics Feb 1948
Alloys, Magnetic
Magnetostriction

"Effect of Thermomagnetic Processing on Magnetization and Magnetostriction Curves of Alsifer Alloys," Ya. S. Shur, A. A. Lukshin, Ural State U imeni M. Gorkiy, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Discusses path of magnetization and magnetostriction curves in relation to size of field set up during thermomagnetic processing. Submitted by Academician S. I. Vavilov, 8 Dec 1947.

FDB 43T96

USSR/Physics Feb 1948
Resonance - Radiation
Diffusion

"Approximation Method for Calculating Diffusion of Resonance Radiation," L. Biberman, Moscow Energetics Inst imeni V. M. Molotov, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments resulting in establishment of method to calculate diffusion of radiation. Emphasizes approximate character of method, but points out that it will be most useful for simultaneous calculation of radiation diffusion and mutual exchanges between several levels. Submitted by Academician S. I. Vavilov, 29 Nov 1947.

FDB 43T98

USSR/Physics 11 Jan 1948
Crystallography
Titanium Dioxide

"Dielectric Permittivity and Its Relation to Temperature for Crystals of the Rutile and Perovskite Type," G. I. Skanavi, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

High dielectric permittivity of rutile crystals (TiO_2), first established by Schmidt, and of perovskite by author. At present there are many known crystals of rutile and perovskite type, dielectric permittivity of which is extraordinarily high. Explanation of causes

FDB 43T100

USSR/Physics Feb 1948
Light - Transmission - Measurements
Projectors, Motion Picture

"Analytic Presentation of the Distribution Curve of Forces of Light in a Projector," M. V. Rumyantsev, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes three methods to calculate flow of light in projector, and results of experiments, showing very good results of use of the angular coefficient method. Submitted by Academician S. I. Vavilov, 22 Nov 1947.

FDB 43T95

USSR/Physics Feb 1948
Gas Flow
Thermal Analysis

"Problems of Thermal Modelling," A. M. Faynzil'ber, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Establishes law for influence of the nature of a gas on thermal processes taking place in a rapidly moving gas flow, and describes some methods of thermal modelling. Submitted by Academician M. V. Kirpichev, 22 Nov 1947.

FDB 43T97

USSR/Physics 11 Jan 1948
Ferromagnetism
Magnetic Fields

"Heterogeneity of the Surface of a Ferromagnet and Fields of Magnetic Dispersion," I. M. Kirko, Latvian State Pedagogical Inst, Riga, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

To explain decrease of the magnetic permeability with period of the magnetic field, V. K. Arkad'yev offered hypothesis on possible influence of the surface of heterogeneous ferromagnet, obstructing the passage of magnetic current with strong skin effect. To confirm this hypothesis, author measures

FDB 43T99

USSR/Physics (Contd) 11 Jan 1948

the longitudinal permeability of smooth bars and bars covered with screw threads in alternating field. Submitted by Academician S. I. Vavilov, 11 Nov 1947.

FDB 43T99

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USSR/Physics (Contd) 11 Jan 1948

of high dielectric permittivity of these crystals must be based upon correct calculation of internal field. Discusses methods to calculate these values. Submitted by Academician S. I. Vavilov, 18 Sep 1947.

FDB 43T100

USSR/Physics 11 Jan 1948
Luminescence
Glass

"Loss of Luminescence by Types of Glass and Uranyl Salts," N. A. Tolstoy, P. P. Feofilov, Luminescence Lab, State Opt Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Presents some results of use of new method to study attenuation of luminescence. Gist of method is development of curve of intensity of luminescence according to the exponential law in time on screen of cathode oscillograph. By varying the exponent of the converter, straight line produced on the screen, indicating identical nature of the law of attenua-

FDB 43T101

USSR/Physics 11 Jan 1948
Chromaticity
Color Standards

"The Problem of Interaction Levels of Color Perception Instruments," L. A. Shvarts, Inst Psychol, Acad of Pedagogical Sci RSFSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Conducted experiments to come closer to solution of problem of the nature of color. Used pharmacological method. Prof S. V. Kravkov and Prof K. Kh. Kekcheyev aided greatly in experiments. Submitted by Academician L. A. Orbeli, 5 Nov 1947.

FDB 43T102

USSR/Physics (Contd) 11 Jan 1948

tion of studied luminescence with the law of the converter. Submitted by Academician S. I. Vavilov, 9 Nov 1947.

FDB 43T101

USSR/Physics 11 Jan 1948
Crystallization
Magnetic Fields

"Crystallizations of the Chemical Compound Al_3Ni from Fusion in a Constant Magnetic Field," K. A. Osipov, A. V. Kuz'min, Inst General and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Authors conducted some experiments on crystallization of chemical compounds of metals from fusion in constant magnetic field. All prior study on crystallization of metallic alloys in alternating magnetic field. Describes experiment with nickel-aluminum al-

FDB 43T103

USSR/Physics 11 Jan 1948
Adsorption
Kinetics

"Method of Analyzing Processes on Heterogeneous Surfaces," V. I. Levin, Dept Catalysis and Topochem, Inst Phys Chem, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Presents method to find the function of distribution, according to energies of activation, of activated adsorption from kinetic isotherms of adsorption. Submitted by Academician A. N. Frumkin, 28 Oct 1947.

FDB 43T104

USSR/Physics (Contd) 11 Jan 1948

loys containing 20% nickel. Experiments show that in constant magnetic field, oriented crystallization of chemical compounds of metals take place. Submitted by Academician G. G. Urazov, 28 Sep 1947.

FDB 43T103

USSR/Physics Feb 1948
Flow, Viscous
Diaphragms

"Some Experimental Data on the Flow of Viscous Liquids through Fine Diaphragms," A. V. Krylov, Inst Mech, Acad Sci USSR, 15 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 2

Gives results of experimental research on coefficient of discharge of viscous liquid (oil) when flowing through fine diaphragms, and effect of eccentricity on discharge measurements. Submitted by Academician V. L. Pozdyunin.

FDB 43T105

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USSR/Radio Feb 1948
Microphones
Mathematics, Applied

"Microphone Functions," A. I. Yakovlev, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Analysis of microphone circuits gives the equations $L\frac{di}{dt} + (R - r\cos\omega t)i = E$ where i is microphone current, t is time, R (t) = R - rcosωt is variable coefficient and L, R, r, ω, and E are constants. Gives solution for i = f (t) where f (t) is a periodic function with a period of $2\pi/\omega$.

FDB 43T106

List of Abbreviations
used in FDB Periodical Abstracts

ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department
BM	Bureau of Mines, Dept of Interior
BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
COM	Department of Commerce
AF	A-2 Library, USAF

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